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ORIGINAL ARTICLES: VARIOUS TOPICS

Barriers to Breast Cancer Screening for Low-Income Mexican and Dominican Women in New York City

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ABSTRACT *The proportion of Mexican and Dominican women has increased rapidly in New York City and in other urban areas, and breast cancer screening rates continue to be lower for Latina women as a whole, but particularly for some nationality subgroups. The current analysis explored the reasons why Mexican and Dominican women from medically underserved communities in New York City do not seek breast cancer screening. Data were collected through interviews with 298 Mexican and Dominican women aged 40–88 years; the interviews included an open-ended question on the barriers women face in seeking screening. The three most commonly cited barriers were not taking care of oneself (*descuido*) (52.3%), lack of information (49.3%), and fear (44.6%). Women who had been screened cited fear, pain, or other personal barriers more often, but women who had never had a mammogram cited cost or other logistical barriers. Responses from Dominican and Mexican women were significantly different, with Mexican women more often citing shame or embarrassment and Dominican women more often citing fear. The dependent variable, barriers to screening, was grouped into major categories. When sociodemographic factors were controlled for, the effect of ethnicity disappeared. Multivariate logistic regression revealed that women with a source of health care were less likely to cite any logistical barriers, but significantly more likely to report only personal barriers (such as fear or* descuido*). The analysis indicated that personal barriers were very prevalent in the communities studied. It may not be sufficient merely to increase access to breast cancer screening services for low-income Latinas: even when women have a source of health care, personal barriers may prevent many women from seeking screening. Outreach programs need to be tailored to the target communities as there are significant differences among groups of Latinas. Targeted outreach programs must work in tandem with programs to increase access to ensure that both personal and logistical barriers to screening are addressed.*

KEYWORDS *Access, Barriers, Breast cancer, Ethnic disparities, Hispanic/Latina, Mammography, Screening, Urban health.*

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BACKGROUND

For Latina women in New York City, breast cancer is the most common cancer and the leading cause of cancer death.[1,2] Although Latinas have a lower breast cancer incidence rate than non-Latina white women,[1] a recent analysis by Hedeen and White of Surveillance, Epidemiology and End Result (SEER) data found that Latina women with breast cancer had a higher percentage of large (>1 cm and >2 cm) tumors at diagnosis than non-Latina whites.[3] Hedeen and White also found that Latina women born in Latin America were at greater risk of having large breast tumors than Latina women born in the United States. Latina women were also found to present with later stage breast cancer than white non-Hispanic women. Advanced stage at presentation may reflect delayed detection or underuse of screening and is associated with a greater risk of disease recurrence and decreased survival. The 2000 Behavioral Risk Factor Surveillance System (BRFSS), a telephone survey funded by the US Centers for Disease Control and Prevention, found that 63.9% of white women compared with 49.9% of Latina women had ever had a mammogram. Increasing screening mammography rates in Latina populations is needed to improve early detection and earlier stage at diagnosis.

Low socioeconomic status, not having health insurance, or not having a usual source of health care have been associated with low levels of breast cancer screening for Latina women.[4–6] In addition, recent research among Latinas in New York City found that higher levels of acculturation were associated with greater odds of having clinical breast exams and mammograms.[7] Different nationalities of Latinas have varying rates of risk factors, such as low rates of health care access, with Mexican women having the lowest rates of mammography compared to other Latina nationalities.[6] There are many reasons why women do not obtain appropriate breast cancer screening, but a key study of rural Latinas of low socioeconomic status in the United States identified several dimensions: knowledge and attitudes (including belief in the usefulness of mammography, understanding personal risk, fatalism, fear of cancer or cancer treatment, and cultural beliefs); issues related to participation (language barriers, cost, pain, and "hassle" factors, including time and transportation); and social concerns (responsibility to self and to others and influence of doctors, family, or friends).[8] Previous studies of barriers to cancer screening have identified personal factors—such as fatalism,[9] anxiety,[10] not wishing to know one has cancer,[11] and "forgetfulness/carelessness"[12]—that are prevalent in various Latina populations.

As Latino populations in urban areas continue to grow—particularly populations who are foreign born, have low socioeconomic status, or have poor access to health care and therefore are at greater risk for late diagnosis of breast cancer—increasing access to breast cancer screening for these communities is critical. It is important to keep in mind that Latina groups have diverse cultural and demographic characteristics, as demonstrated in this analysis. According to the 2000 US census, from 1990 to 2000, the Mexican population increased by 203% in New York City, and the Dominican population increased by 75%.* The recent influx of Mexican and Dominican populations to New York, whose populations have not been adequately studied in the past, has created a need for research such as this on preventive health needs.

*The reporting of Dominican ethnicity on the US census is currently the subject of debate; actual increase in population is thought to be greater.

METHODS

Medical and Health Research Association of New York City (MHRA) serves 20,000 women each year through its eight MIC-Women's Health Services (MIC) centers. MIC provides family planning and prenatal care services to a unique low-income population that is largely Latina (51% of patients in 2000), with the most common ethnicity being Dominican. This study engaged the young women served at the MIC centers to identify and contact their relatives aged 40 years and older to participate in the health research survey. The goal of the Breast Cancer Screening and the Multigenerational Hispanic Family project was to interview Mexican and Dominican MIC clients and their female relatives aged 40 years or older regarding their knowledge, attitudes, and practices of breast cancer screening. To be eligible to have the family included in the survey, clients needed to identify themselves as being of Mexican or Dominican descent, be aged 20 years or older, and have at least one female relative aged 40 years or older living in the New York City area. This study was approved by the MHRA Institutional Review Board.

Interviewers sequentially approached and screened for eligibility every client identified from registration lists at three MIC centers with high concentrations of Mexican and Dominican clients: Astoria, Queens; Manhattanville, in upper Manhattan; and Williamsburg, Brooklyn. The interviewers screened 2,556 clients. Overall, 2,221 were ineligible: 1,477 were an ethnicity other than Mexican or Dominican; 699 Mexican or Dominican women had no appropriate relatives in the area; and 45 were under age 20 years. Of eligible clients, 6% (n = 20) refused participation, and 315 completed the survey and provided contact information for relatives. The interviews were administered in Spanish by trained bilingual and bicultural female interviewers. After giving written informed consent* and completing the interview, clients were asked to identify and provide contact information for their female relatives aged 40 years and older. There were 448 relatives identified. Of these, 59 (13%) refused participation, 79 could not be contacted, and 12 were ineligible because they were under 40 years of age (n = 9) or were not Mexican or Dominican (n = 3). The relatives were interviewed either in the MIC centers when they accompanied their younger relatives to an appointment or through home visits (39% of completed relative interviews). No significant demographic or health differences were found between relatives interviewed in the centers and those interviewed at home. The following analysis includes 298 relatives aged 40 years and older.

MEASURES

Instrument

Participants completed a 45-item survey that was administered in Spanish by the interviewer. The survey instrument had both closed- and open-ended questions, including sociodemographic information (age, menopausal status, education level, marital status, age at immigration to the United States, preferred language at home);

*The written informed consent stated: "Whether or not you participate is up to you. You can refuse to answer any question, and you can end this interview at any time. All information you give will be confidential. Your name will not appear on the questionnaire or in research reports, and no one in your family will be told what you said. The services you receive at MIC will not be affected and no one will be told what you said." The consent process was completed in Spanish.

basic health care information (source of care, health insurance coverage, self-rated health scale, smoking history); experience with breast cancer (personal history of breast lumps; whether family or friends have had breast cancer); sources of health information; and perceived personal risk of breast cancer. Closed-ended questions inquired about knowledge (whether she had heard of the screening method) and practice (whether she had ever practiced the screening method and, if so, how recently) of three different breast cancer screening methods: breast self-exam (BSE), clinical breast exam (CBE), and mammography. Open-ended questions asked participants to describe their general feelings or thoughts about breast cancer, the advantages and disadvantages of breast cancer screening, possible causes of breast cancer, barriers that women (in general) face in obtaining breast cancer screening, and recommended ages for the three screening methods. Analysis of open-ended items other than barriers is not included in this paper.

Dependent Variables

Barriers to breast cancer screening cited by participants were categorized as follows: *descuido*, or not taking care of oneself; fear (of the result or of the test); information (about screening or about where to obtain screening services); not having enough money; not having enough time; not having health insurance; shame or embarrassment about one's body; concern that the test causes pain; and thinking that one is healthy or that one will not get cancer. Categorization of the groups was carried out by two separate reviewers. Responses that did not fit these categories were coded as "other." In turn, the various barriers were categorized into groups: personal (*descuido*, fear, shame, pain, or thinking one is healthy) or logistical (not having time, money, or insurance) and information.

Data Analysis

Data analysis was performed using SPSS statistical software, version 9.0 (SPSS, Inc., Chicago, IL). Statistical differences between the two ethnic groups and differences in the frequency of reporting specific barriers by demographic groups were assessed by chi-square tests for categorical variables and analysis of variance for continuous variables. Bivariate odds ratios (ORs) and 95% confidence intervals (CIs) were calculated for demographic variables and naming barrier groups [personal barrier(s) only, any personal barrier, logistical barrier(s) only, any logistical barrier]. Using logistic regression, adjusted odds ratios and 95% confidence intervals were calculated with barrier groups as the dependent variables, adjusting for ethnicity (Dominican, Mexican); health insurance coverage (any [private, Medicaid, and/or Medicare], none); education (elementary or less, some high school or more); years in the United States (15 or more years, 5–14 years, less than 5 years); age (40–49, 50–64, and 65 years or older); source of health care (no source, source); mammogram history (never, ever); and BSE history (never, ever).

RESULTS

Sociodemographic and Health Profiles

Table 1 presents basic sociodemographic and health information for women in the sample. The women in the sample had low levels of educational attainment and were medically underserved: almost 43% had no source of health care, and two thirds were uninsured. Mexican and Dominican women differed significantly on all

TABLE 1. Demographic and health care profile of women aged 40 years and older

Characteristic	All women (N = 298)	Dominican (N = 153)	Mexican (N = 145)
Sociodemographic			
Age, years (mean)*	52	54	49
Educational attainment, %†			
No formal education	14.4	7.2	22.1
Elementary school only	56.0	51.6	60.7
Some high school	10.7	15.0	6.2
High school graduate	11.7	16.3	6.9
Some college or beyond	7.0	9.8	4.2
Years in United States, by group, %†			
Less than 5 years	15.5	14.5	16.6
5–9 years	19.5	13.8	25.5
10–14 years	24.9	17.1	33.1
15 years or more	40.1	54.6	24.8
Marital status, %†			
Married or living as married	60.3	49.6	71.5
Never married	10.1	12.4	7.6
Separated/divorced or widowed	29.6	37.9	20.8
Preferred language at home, %			
Spanish	96.0	95.4	96.6
English	4.0	4.6	3.4
Health care			
Have no source of health care, %†	42.9	32.2	54.2
Insurance coverage, %†			
No insurance	66.7	46.7	87.6
Medicaid and/or Medicare	23.5	38.8	7.6
Private insurance	9.8	14.5	4.8
Cancer screening behaviors			
Ever had a mammogram, % yes†	70.5	79.7	60.7
Ever had clinical breast exam, % yes†	86.2	95.4	76.6
Ever had a Papanicolaou smear, % yes†	91.5	96.7	86.1
Ever performed breast self-exam, % yes†	77.4	90.7	63.4

*$P < .001$ by one-way analysis of variance for the association between ethnicity and the characteristic.

†$P < .001$ by chi-square test for the association between ethnicity and the characteristic.

sociodemographic and health care variables, with the exception of preferred language. As shown in Table 1, Mexican women were significantly younger, less educated, more recent arrivals in the United States, and more likely to be married. Many more Mexican women had no source of health care and no health insurance, and as a result, Mexican women were far less likely ever to have been screened. Only 60.7% of the Mexican women aged 40 years and older and 74.5% of Mexican women aged 50 years and older had ever had a mammogram.

Barriers to Screening

The survey asked respondents to name reasons why women in general do not get screened for breast cancer. Almost all women named more than one barrier. More

than half (52.3%) of the women named *descuido* as a barrier. *Descuido* is difficult to translate into English; literally, it can mean disinterest, carelessness, or negligence, while in this context, it can refer to neglecting one's health or not making one's health a priority. The next most frequently named barriers were lack of information (49.3%), fear of the result and/or the test (44.6%), not having enough time (30.9%), not having insurance (29.5%), not having enough money (29.9%), being ashamed or embarrassed (12.4%), the pain of the test (11.4%), and thinking that one is healthy or will never get cancer (10.7%). Only 3% of women named unique barriers not included in these categories.

Again, there were significant differences between the Dominican and Mexican women in the barriers they named, as shown in the Figure. Dominican women far more frequently reported fear (of the test and/or of the result) as a barrier, with 55% of them naming fear, compared with a little more than a third of Mexican participants (34%). Dominican women also more frequently named insurance or pain as barriers. Compared to Dominican women, almost twice as many Mexican women named money and shame or embarrassment as barriers. There were no significant differences by ethnicity for the other barriers.

These barriers were coded into groups (logistical, personal, informational, other). Dominican women were almost two times as likely as Mexican women to name any personal barrier. They were significantly more likely (OR = 1.62, 95% CI 1.01–2.59) to name only personal barrier(s) and to name any personal barrier (OR = 2.56, 95% CI 1.17–5.61). On the other hand, Mexican women were significantly more likely to name only logistical barrier(s) (OR = 2.73, 95% CI 1.16–6.46).

Because of the relationship between ethnicity and many of the factors that affect screening behaviors—such as access to health care and socioeconomic background—multivariate logistic regression was used to adjust for factors likely to affect screening behavior. Tables 2 and 3 illustrate the adjusted and crude odds ratios for naming only personal barrier(s) and naming any logistical barrier, respectively. In the bivariate analysis, Dominican women, as well as women who had ever had a mammogram, women aged 50 years and older, and women with a source of health care are more likely to name only personal barriers to screening. However, when one takes into account the relationship among ethnicity, access to care, and

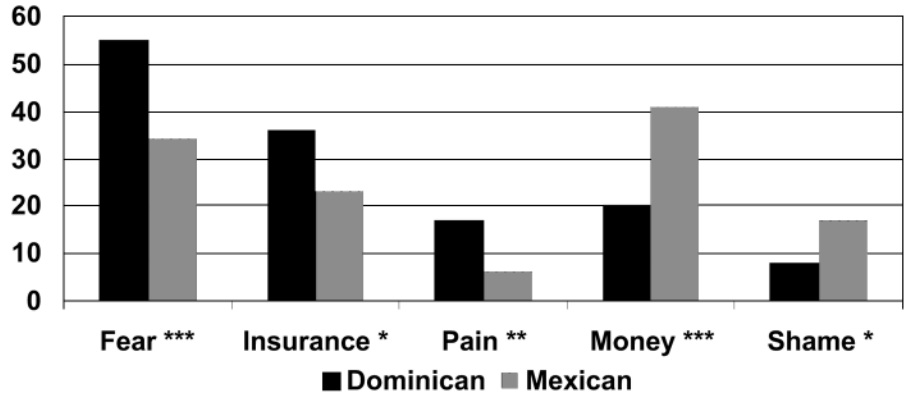

FIGURE. Percentage of women citing certain barriers to breast cancer screening, by ethnicity (N = 298). ***$P < .001$; **$P < .01$; *$P < .05$.

TABLE 2. Adjusted and crude odds ratios for women naming personal barrier(s) only (N = 298)

	Crude odds ratio (95% CI)	Adjusted odds ratio (95% CI)
Source of care		
No source of care	Reference	Reference
Has source of care	**3.35 (2.01–5.57) (*P* < .0001)**	**3.39 (1.88–6.10) (*P* < .0001)**
Health insurance status		
Private, Medicaid, and/or Medicare	Reference	Reference
No insurance	0.52 (0.22–1.26)	1.33 (0.67–2.62)
Ethnicity		
Mexican	Reference	Reference
Dominican	**1.62 (1.01–2.59) (*P* < .05)**	1.22 (0.67–2.25)
Age, years		
40–49	Reference	Reference
50–64	**1.68 (1.01–2.79) (*P* < .05)**	1.55 (0.87–2.77)
65 and older	**2.24 (1.08–4.65) (*P* < .05)**	1.45 (0.59–3.59)
Years in United States		
15 or more years	Reference	Reference
5–14 years	0.99 (0.50–1.97)	0.85 (0.47–1.53)
Less than 5 years	0.63 (0.37–1.04)	1.49 (0.67–3.31)
Education		
Elementary or no schooling	Reference	Reference
Some high school or above	1.13 (0.68–1.87)	1.21 (0.65–2.24)
Ever performed breast self-exam		
Never	Reference	Reference
Ever	1.11 (0.63–1.94)	0.77 (0.39–1.52)
Ever had a mammogram		
Never	Reference	Reference
Ever	**2.08 (1.21–3.58) (*P* < .01)**	1.61 (0.84–3.07)

Note: Personal barriers include fear, *descuido*, shame, pain, or thinking one is healthy. Adjusted odds ratio model includes all variables listed in the table.

CI, confidence interval.

screening behaviors, only having a source of care remains as a significant factor in citing personal barriers to screening. Adjusting for insurance status, education, years in United States, ethnicity, and screening behavior, women with a source of health care were more likely (OR = 3.39, 95% CI 1.88–6.10) to name only personal barriers to screening. For women naming any logistical barrier, similar results were found. Women who had ever had a mammogram, women with a source of health care, and women aged 50 years and older were less likely to cite any logistical barrier. Women with no health insurance were more likely to cite logistical barriers. In this case, the difference between Mexican and Dominican women was of borderline statistical significance.

Again, in the multivariate logistic regression, only women with a source of health care were significantly less likely (OR = 0.33, 95% CI 0.19–0.59) to name any logistical barrier to screening. Health insurance coverage, which differs significantly between Mexican and Dominican women, was included in the logistic regression model; however, it was not a significant predictor of naming logistical barriers

TABLE 3. Adjusted and crude odds ratios for women naming any logistical barrier(s) (N = 298)

	Crude odds ratio (95% CI)	Adjusted odds ratio (95% CI)
Source of care		
No source of care	Reference	Reference
Has source of care	**0.32 (0.20–0.53) (*P* < .0001)**	**0.33 (0.19–0.59) (*P* = .0002)**
Health insurance status		
Private, Medicaid, and/or Medicare	Reference	Reference
No insurance	**1.82 (1.12–2.98) (*P* < .05)**	0.80 (0.41–1.57)
Ethnicity		
Mexican	Reference	Reference
Dominican	0.64 (0.40–1.03)	0.89 (0.49–1.62)
Age, years		
40–49	Reference	Reference
50–64	**0.59 (0.36–0.97) (*P* < .05)**	0.62 (0.35–1.09)
65 and older	**0.43 (0.20–0.88) (*P* < .05)**	0.61 (0.25–1.50)
Years in United States		
15 or more years	Reference	Reference
5–14 years	1.55 (0.93–2.58)	1.13 (0.63–2.02)
Less than 5 years	1.08 (0.54–2.14)	0.73 (0.33–1.61)
Education		
Elementary or no schooling	Reference	Reference
Some high school or above	0.86 (0.52–1.42)	0.77 (0.42–1.41)
Ever performed breast self-exam		
Never	Reference	Reference
Ever	0.89 (0.51–1.56)	1.27 (0.65–2.48)
Ever had a mammogram		
Never	Reference	Reference
Ever	**0.47 (0.27–0.81) (*P* < .01)**	0.61 (0.32–1.15)

Note: Logistical barriers include not having enough time, not having enough money, or not having health insurance. Adjusted odds ratio model includes all variables listed in the table.

CI, confidence interval.

or naming only personal barriers. When the logistic regression was repeated excluding health insurance coverage, the findings were the same. After adjustment, there were no variables significantly associated with naming only logistical barriers or naming any personal barrier.

DISCUSSION

While more Americans than ever before are being screened for cancer, those without health insurance and/or a primary source for health care are being left behind[13,14]; indeed, our results show that women without a source of health care are more likely to cite logistical barriers to screening. Previous studies of women of all ethnicities have indicated that having a source of care—and the associated referrals and recommendations by the health care providers—are strong predictors of mammographic screening, particularly among non-Hispanic white women.[13,15] Although literature on the subject of barriers to screening has focused on the logistical barri-

ers that low-income women face, our research indicates that personal barriers such as fear or not taking care of one's health (*descuido*) are also prevalent. This analysis confirms the prevalence of some previously cited barriers (such as fear), but also finds a very high prevalence of *descuido* as a barrier in two specific Latina populations not previously studied. *Descuido*, which was the most commonly cited barrier in one-word responses to an open-ended question, may include not making one's health a priority due to competing priorities or not taking care of themselves because they do not have time.

Subjects in this analysis were asked to name barriers to screening that women face in general, not necessarily the barriers they themselves have faced. The use of indirect phrasing of the question was intended to avoid conveying criticism to the large proportion of women who had not been screened.[16] Although this phrasing of the question may have led to citation of more barriers per woman and diluted the association between cited barriers and screening behavior, we feel that the loss of association was preferable to introducing social desirability bias by directly asking women why they, themselves, had not been screened.

This analysis focused only on Mexican and Dominican immigrant women in New York City. Caution should be used in applying the findings to other ethnic populations or to women living in other areas. In addition, relatives were interviewed when interviews could be scheduled. Therefore, although the number is small, family members who did not respond or who refused to participate may differ systematically from those who did participate.

For the group of women studied, the levels of ever having breast cancer screening were similar to the New York State levels reported for all women in the 2000 BRFSS: for the sample, 70.5% reported ever having had a mammogram (compared with 63.9% for the BRFSS), and 86.2% had ever had a clinical breast exam (86.9% for BRFSS), despite the higher prevalence of many risk factors for underscreening compared to the general population. This discrepancy may reflect the greater availability of screening services in New York City. Because screening histories collected both in this study and in the BRFSS rely on self-report, which has been found in several validation studies to result in over-reporting, the prevalence of screening behaviors may be overstated in both studies.[17,18]

Our results indicate that it may not be sufficient to increase access to breast cancer screening services for low-income Latinas by making services less expensive or more convenient or by expanding health insurance coverage. Even when women have a source of health care, personal barriers may prevent many women from seeking screening. Women without a source of health care face many logistical barriers to getting screened, including cost and time, but women who do have access to health care and who may not be facing logistical barriers also avoid being screened.

Our results indicate that Mexican and Dominican women cited different barriers, with Mexican women more frequently citing shame and embarrassment or not having money and Dominican women citing fear or not having health insurance. It is critical to note that Latinas are not a uniform group. Dominicans and Mexicans in the New York City area are very different from each other in their cultural backgrounds and attitudes and in their sociodemographic profiles, their immigration experience, and their access to health care. The differences we found in the populations may represent acculturation or socioeconomic status of the ethnic groups in New York City and not necessarily a difference in beliefs between the cultures. Nevertheless, programs that seek to reach these populations need to take

community characteristics—both socioeconomic and cultural—into account. Any program seeking to expand access to breast cancer screening services within low-income Latina communities needs outreach campaigns that are developed in collaboration with the target community, with an emphasis on barriers specific to the community. These outreach programs need to work in tandem with existing programs intended to increase access to address both the logistical and the personal barriers to breast cancer screening.

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